

# NASA TECH BRIEF

## John F. Kennedy Space Center



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### Potentiometer, Constant Tension and Lubrication Device

#### The problem:

Strip chart recorders contain feedback potentiometers which have wipers moving over a resistive element. Contaminants such as dirt and lack of proper tension cause electronic noise interference to appear in the recorded signal. The present solution to the problem is frequent disassembly of the potentiometers for cleaning and lubrication.

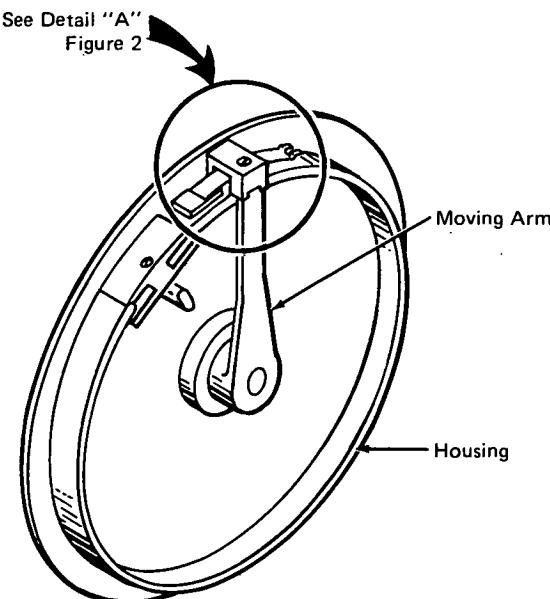


Figure 1. Potentiometer Rear View

#### The solution:

Install a wiper assembly on the potentiometer (see Figure 1) which will provide self cleaning, self lubrication, and tension within controlled limits.

#### How it's done:

A one piece wiper assembly providing wiper contacts on the one end and a lubricator on the other end is used (see Figure 2). The wiper assembly is connected to the moving arm of the potentiometer in a manner which will permit it to pivot on a preselected point.

One end of the assembly contains the wiper contacts and a loose fitting leather pad that is thoroughly soaked in wiper lubricating fluid, while the other end consists of a piece of leather which also has been soaked in wiper lubricating fluid. Retention of the fluid is helped by a plastic case over the non-working portion of the leather. This case also serves as the attachment point to the pivoting arm.

#### Advantages:

A constant wiper tension within practical limit, can be achieved by the proper selection of the pivot point, the elasticity of the steel arm, and the counter balance action of the lubricator end.

The cleaning and lubrication of the potentiometer resulting from the use of lubrication soaked leather results in noise free operation.

Conversion to this design can be made on present potentiometers.

The electronic noise free operation with the use of this design results in reduced maintenance and the attendant costs.

#### Note:

Requests for further information may be directed to:

Technology Utilization Officer  
Kennedy Space Center  
Code AD-PAT  
Kennedy Space Center, Florida 32899  
Reference: B72-10541

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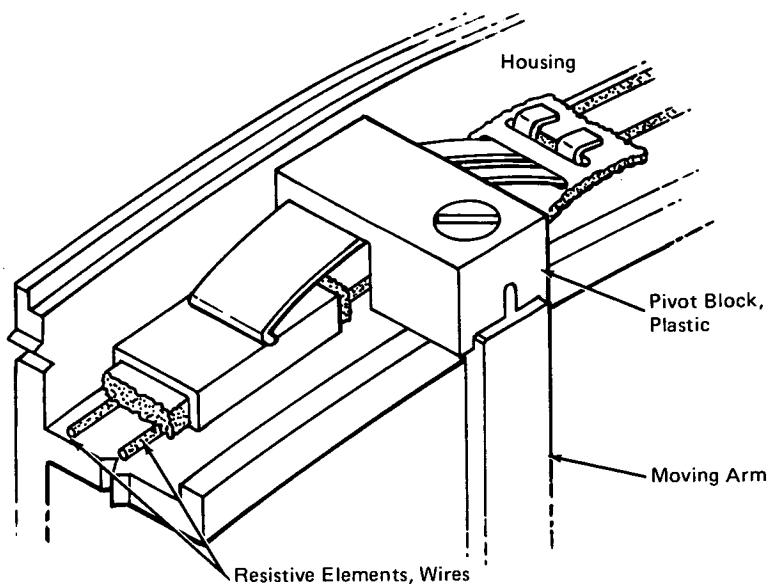


Figure 2. Detail "A"

**Patent Status:**

Inquiries concerning rights for the commercial use of this invention should be addressed to:

Patent Counsel  
Kennedy Space Center  
Code AD-PAT  
Kennedy Space Center, Florida 32899

Source: H. J. Smith of  
The Boeing Company  
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